T371
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1916

Conservation Resources
Lig-Free® Type I
Ph 8.5, Buffered

T371
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Reinhardt, Charles William
T321
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Contents

Reinhardt's Correspondence Course

Lettering for Draftsmen, Engineers and Students

Lesson 1. Elements of small i, n, m, h, r, l, t, j, f, with Application.
" 2. " " " k, u, v, w, x, y, z, 4, 7, do.
" 3. " " " o, c, e, ʃ, 8, s, &, ø, ɑ, d, do.
" 4. " " " q, g, p, b, 2, 3, 5, 6, 9, do.
" 5. " " Capital I, L, T, F, E, H, K, N, M, A, do.
" 6. " " " V, W, X, Z, U, Y, J, D, B, R, do.
" 7. " " " O, Q, G, S, I-X, with Exercises.
" 8. Practice Sheet: Expanded and Condensed Styles.
" 9. Elements of small r, n, m, i, h, j, ʃ, s, 8, f, &, 2, with Application.
" 10. " " " v, w, y, x, z, 7, 4, l, t, k, 3, u, do.
" 11. " " " o, a, d, q, c, e, b, p, g, 9, 6, 5, do.
" 12. " " Capital I, H, E, F, L, T, A, M, N, V, K, Y, X, Z, do.
" 13. " " " O, Q, C, G, D, P, B, R, J, U, S, do.
" 14. Practice Sheet: Expanded and Condensed Vertical.
" 15. " " Studies in Spacing of Letters and Words.
Lesson 16. Single-Stroke Italic (Lower Case) Analyzed.
" 17. " " " (Capitals) do.
" 18. Greek Alphabet (Cap. & Lower Case) Analyzed.
" 19. Simplified Round Writing Analyzed.
" 20. Black-Faced GOTHIC (Cap. & L.c.) Analyzed.
" 21. Modern Type ROMAN (Cap. & L.c.) Analyzed.
" 22. Single-Stroke ROMAN (Cap. & L.c.) Purely Freehand.
" 23. " " ARCHITECTURAL (Cap. & L.c.)
" 24. Lettering Applied to Structural Drawings.
" 25. " " " Marine " .
" " " " Machinery " .
" " " " Curve Sheet " .
" 26. " " " Bridge " .
" " " " Railway Eng. " .
" 27. " " " Topographical " .
" " " " Int. C. Comm. " .
" 28. } Development and Construction of Titles.
" 29. }
" 30. Do. Scales, Meridians, Finishing Touches, etc.

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LESSON 1.

Instructor's Criticisms:

Dot on "i" is really a short Dash.

Note Shapes of Stems, not straight, but: l

Note Shape of "h" Carefully Copy.

The Correct Shape of Tops of "f" and Bottoms of "j" can be Determined by Assuming the Upright Letters (Semi-circular Tops and Bottoms) to be of Plastic Material, having been Pushed over, thus: f f j j

Note Shape of Stem of "j": j (Exaggerated)

Trace either on Smooth Side of Tracing Cloth or do. Paper. Prepare Surface by Briskly Rubbing with Powdered Pumice. Not Necessary to Trace Ruled Lines, but Use Pencil Guide and Slope Lines instead. Direction and Sequence of Pen Strokes is Indicated by Arrows and Numerals. Use a Medium Fine Pen, Employing Uniform Pressure upon it and Increasing same, when Moving Sidewise or in a Horizontal Direction, so as to get Even Thickness of Body of Letters. Penholder should be not less than $\frac{5}{16}$" Diam. at Point of Grip. If dissatisfied with your Work on this Sheet, do over again, following Directions more Closely.

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LESSON 2.

First Trace Carefully, afterwards Form your Own Letters.

Faulty: Instructor's Criticisms:

Note Shape of "k"

Same Injunctions for "u" as for Top and Bottom of "f" and "j" (Lesson 1)

Always make "x" smaller at Top than at Bottom.

Be sure to keep Second Stroke Straight to almost the Bottom.

Exaggerate Points: 4 7

k k k k k k

u u u u u u

v v v v v v v

w w w w w w w

x x x x x x

y y y y y y

z z z z z z

4 4 4 4 4 4

7 7 7 7 7 7

kulm kulm

47th 47th

fully fully

july july

zink zink

General Directions as for Lesson 1. Make Sure about Axis of "v" and "w" Passing through Center of Respective Letters, thus: v w, and not as Shown under "Faulty" at Right of Sheet.
A Similar Rule Applies to: y z and 7

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LESSON 3.

Trace very carefully in Full Outlines; Continue by Forming your Own Letters.

Instructor's Criticisms:

Make sure to curve Lower Part of First Stroke of "o" sufficiently. Clean Joints.

Start "c" with a little Hook at Top.

Get Axis and Shape of "Ogee" Curve Correct; this is the Basis of Letter "s" and Numeral "8."

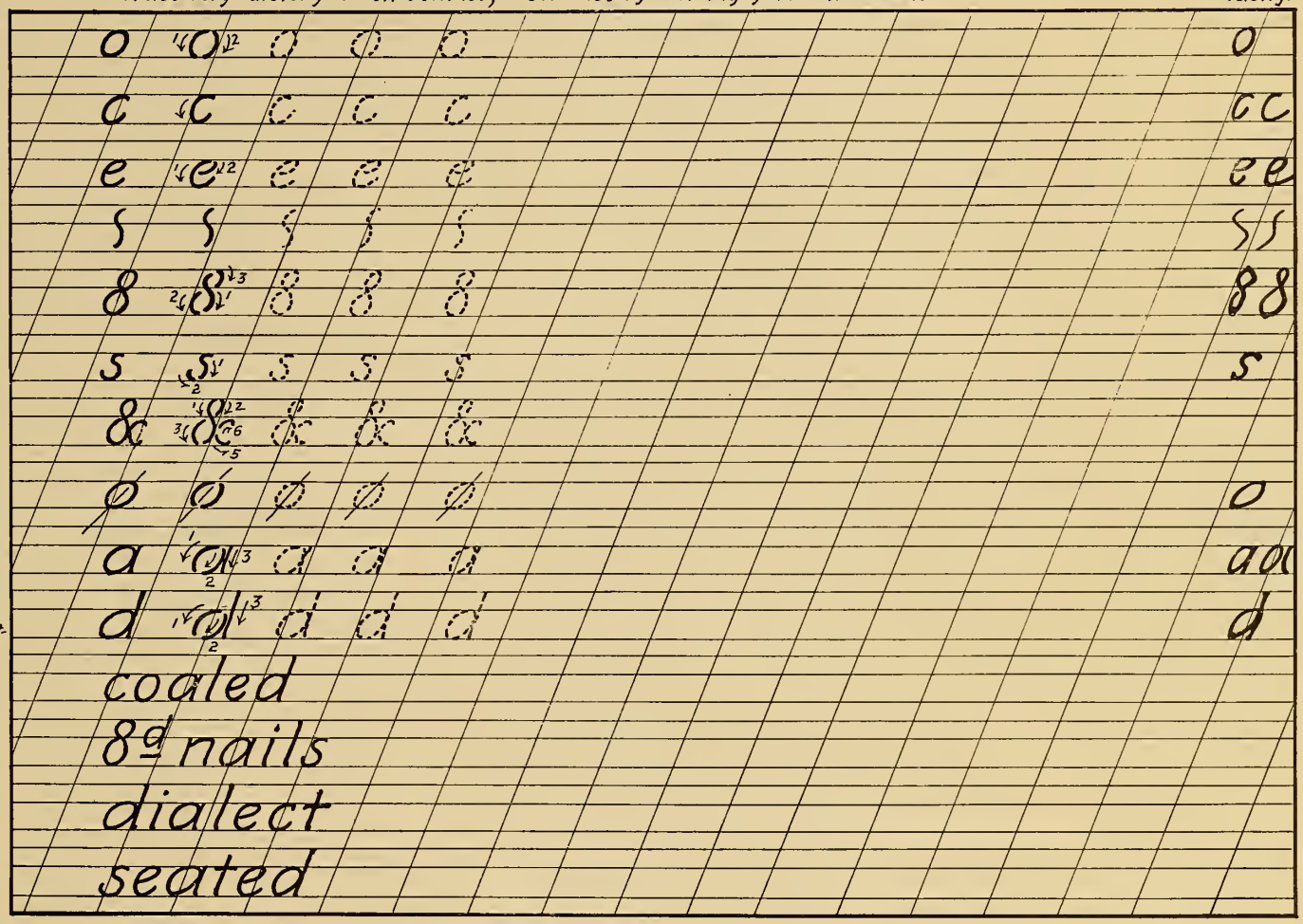
Be sure to get Top of "8" smaller than Bottom. Same for "s".

Numeral "8" is Basis for this Symbol.

Axis of Ellipses for Letters "a" and "d" Sloped 1:1.

Third Stroke of "a" and "d" purely tangent to Ellipse, slightly turned outward, thus: a

Letter "d", Exaggerated.



General Directions as for Lesson 1.
Attention is especially Directed towards Careful Formation of "Ogee" Curve on Fourth Line.

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Lesson 4.

Trace Carefully in Full Outlines; Continue by Forming your Own Letters.

Instructor's Criticisms:

Similar Directions as Given for "a" and "d."

Letter "g". Practically Same Procedure as for "q". Keep 3rd Stroke straight until P. of Curve, then turn rapidly. About Shape of Base of "g", see Letter "j" (Lesson 1.)

Stems of "p" and "b" - thus: (Exaggerated)

Follow Shape of "2" carefully.

Base of "3", "5" and "6" about $\frac{3}{5}$ Total Height.

Observe Indicated Axes of Ellipses of four Numerals Marked.

		Faulty.
q	q q q q	q
g	g g g g	g
p	p p p p	pp
b	b b b b	b
2	2 2 2 2	22
3	3 3 3 3	33
5	5 5 5 5	55
6	6 6 6 6	66
9	9 9 9 9	99

2536 piles

quays

pabulum

gap

tangent

General Directions as for Lesson 1.

It is of Course Understood, that the Shapes Shown under "Faulty" are not to be Copied. They simply Show, "How not to do it."

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LESSON 5.

Trace Carefully in Full Outlines; Continue by Forming your Own Letters.

Faulty. Instructor's Criticisms:

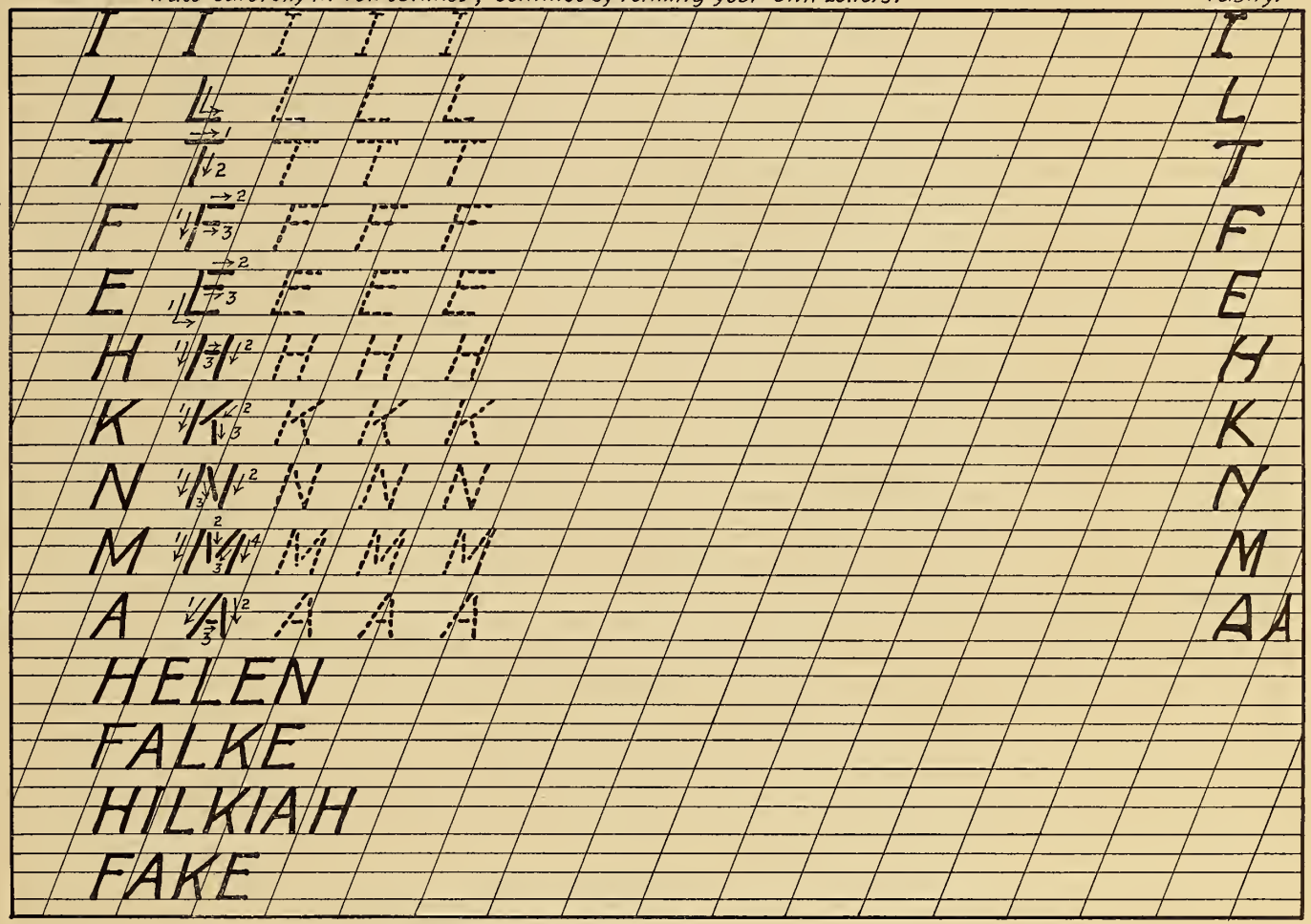
Exaggerate Point at Base: thus: ----> L

Bear in Mind Shapes of Stems, thus: T F

Bend outward, so as to produce good Point --> at Top and Bottom --> E

Both Downstrokes of "H" Curved Outward: H

Observe Rules Laid down before for Main Stems: K, N, M. (Exaggerated)



General Directions as for Lesson 1.

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LESSON 6.

Trace in Full Outlines; Continue Forming your Own Letters.

Practically same Directions as given for Lower Case Letters.

Make sure about Axis of Letters V, W, X, Z, Y, thus:

and not:

Stems of "U" must be parallel, or, if deviating, further apart at Base than at Top.

Lower Loop of "B" might be Made with a Third Separate Stroke.

					Faulty	Instructor's Criticisms:
V	V	V	V	V	V	
W	W	W	W	W	W	
X	X	X	X	X	X	
Z	Z	Z	Z	Z	Z	
U	U	U	U	U	U	
Y	Y	Y	Y	Y	Y	
J	J	J	J	J	J	
D	D	D	D	D	D	
B	B	B	B	B	B	
R	R	R	R	R	R	

WAVERLEY

ZUYDER

XERES

JEFFREY

In Joining the Sloping Strokes of some of the above Letters, as for Instance: V, W, Y, Remember, that Center Lines of Strokes really must Converge, thus:

(Enlarged)

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LESSON 7.

Trace at First; Form Own Letters Afterwards.

Instructor's Criticisms:

Similar Instructions for "O" and "S," as given for Corresponding Lower Case Letters.

If Necessary, a Separate First Hooked Stroke can be Employed for Letters "C" and "G," Analogous to the one Shown for the "S."

Top and Bottom Horizontal Strokes for Roman Numerals are Made by Giving the Pen a Greater Inclination, thereby Increasing the Flow of Ink.

Trace Words and Sentences More than Once.

O O O O O

Q Q Q Q Q

G G G G G

C C C C C

S S S S S

I II III IV V

VI VII VIII IX

GALVANIZED

SILHOUETTE

QUARANTINE

"Cap and Lower Case" Lettering Easiest and Most Rapidly Constructed.

"LARGE AND SMALL CAPS" SOMETIMES EMPLOYED TO ADVANTAGE.

General Directions as for Lesson 1.

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LESSON 8.

Carefully Trace. Use Pencil Guide and Slope Lines.

Instructor's Criticisms:

Note that Specimens of Condensed as well as Extended Lettering are all of same Height.

Frequently Clean your Pen by Workings Nibs back and forward against a Rag. Use also very little Ink, when doing "Condensed", as Strokes naturally must be thin.

A well worn or "Broken-in" No. 303 Gillott Pen has been Used for Producing this Original. (A new Pen,- same Make and Number,- is Used for this Small-Sized Lettering. Point can be kept clean by frequently sticking into Soft Parts of the Drawing Board)

The Flexibility or Adaptability of this System of Lettering to Varying Conditions by Spreading or Condensing Letters is Demonstrated here: LIGHT — LIGHT

Where you find after Starting to Letter that Allotted Space is insufficient, you may gradually Condense: "Specimen Page" or vice versa, where Space is too Large: "Engineering".

By Studying and Practicing these or Similar Specimens a "Golden Middle" of Spacing will soon become a Habit. As a Rule, space Letters forming a Word, as closely as possible.

Mechanical Drafting is the Art of Expressing by a System of Lines the Idea of an Engineering Structure, etc., SO THAT "HE WHO READS MAY RUN."

$1\frac{1}{2}$ $1\frac{1}{2}$ $2\frac{5}{8}''$ $2\frac{5}{8}''$ $13\frac{3}{4}''$ $13\frac{3}{4}''$ $59\frac{15}{16}''$ $59\frac{15}{16}''$

Heavier Body of Extended Lettering (always Single-Stroke) is Produced by Increased Pressure upon Same Pen.

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Lesson 9.

Trace at first; Continue Forming your Own Letters.

Faulty: Instructor's Criticisms:

Purely Vertical System. In Order to Counteract the Natural Tendency of every Beginner to Lean this Lettering to the Right, Adopt the Practice of Leaning your Letters a Trifle backwards – to Left: h (Exaggerated)

The Ogee Curve: ʃ should be Practiced until properly Shaped, so it may Serve as a Basis either for Numeral 8 or Letter s.

Do not Exaggerate "Hump" in Second Stroke of "2" too much.

Note Shape of Main Stems of "j," and "f," also "h."

j f h

r n n r n r r

m m m m m m m

i h h h h h h

j j j j j j j

ʃ ʃ ʃ ʃ ʃ

s s s s s s s

8 8 8 8 8 8 8

f f f f f f f

& & & & & & &

2 2 2 2 2 2 2

him

rift

28 fish

minim

Similar Directions as for Lesson 1.

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Lesson 10.

Trace at first; Continue Forming your Own Letters.

Faulty.

Instructor's Criticisms:

Do not Use an Excessive Amount of Ink, when Constructing these Letters, so as to Avoid:

v y x
4 z k
etc.

Remember the Vertical Axis of all these Letters; Exaggerate by Slightly Leaning All of these Backwards.

In Order to get a Clean Intersection, it is Advisable to do the Second Stroke of the "x" in two Parts.

v w w w w w w

y y y y y y

x x x x x x

z z z z z z

7 7 7 7 7 7

4 4 4 4 4 4 4

t t t t t t

k k k k k k

3 3 3 3 3 3

u u u u u u

wilt

1743

tuy whiff

fuzz

Similar Directions as for Lessons 1 and 9.

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Lesson 11.

Trace at first; Continue Forming your Own Letters.

Instructor's Criticisms:

Curve both Strokes, Composing "o", sufficiently at Ends.

Make sure about Bending Third Strokes of "a" and "d" outward, so as to give Apparent Base.

Main Stems of "d" and "b", same as in former Lessons:

d b

Third Stroke of "g" analogous to Stem of "j":

g j

(Exaggerated)

Have Tail (Fourth Stroke) of the "g" Extend Almost the Entire Width of Portion Above; Avoid Short Crook.

o a d q c e b p g 9 6 5 oo aa d q ce bp gg 9 6 5

quince

et cetera

695 yeomen

albumen

Similar Directions as for Lessons 1 and 9.

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Name: _____

P.O. Address: _____

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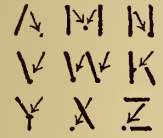
LESSON 12.

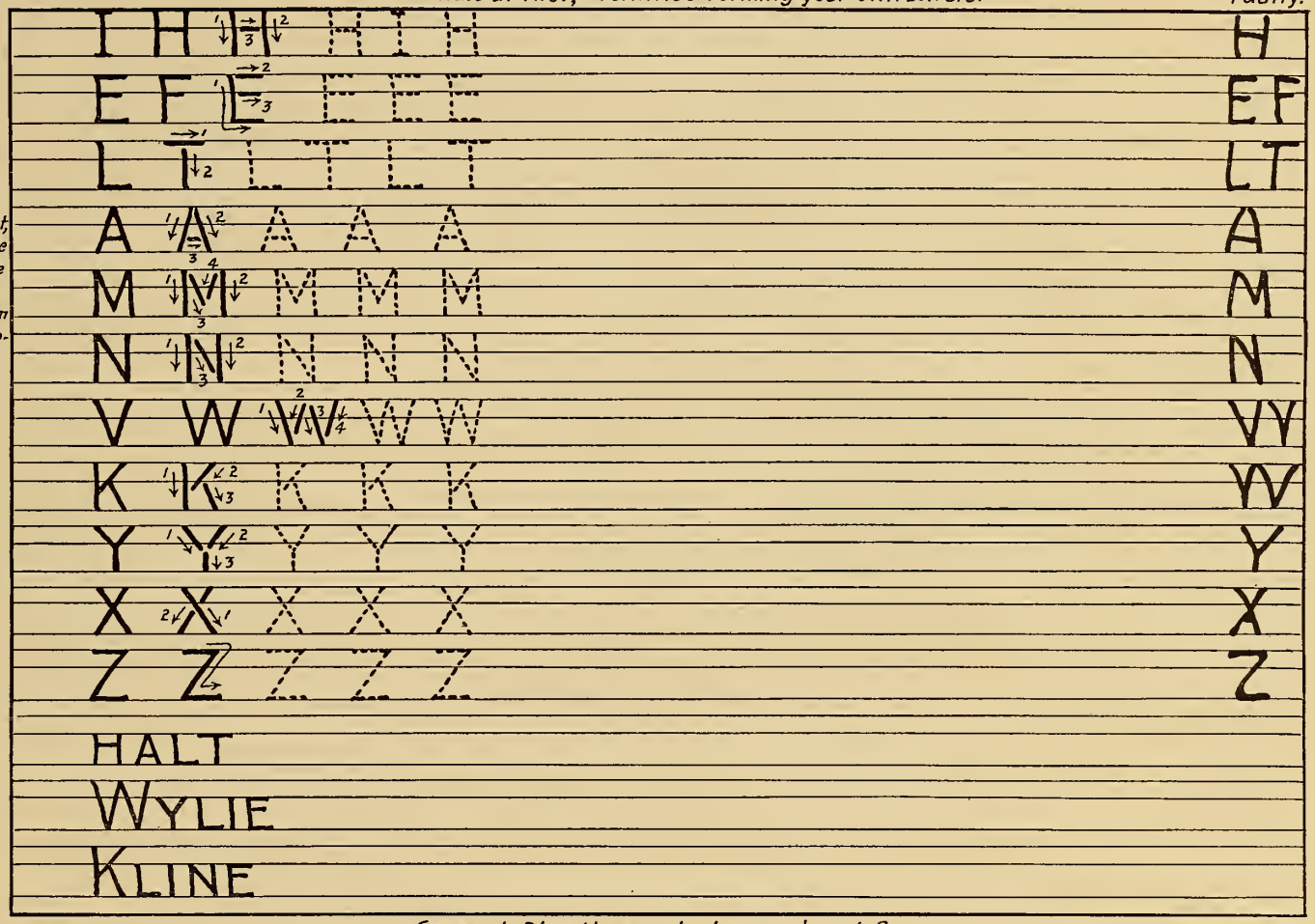
Trace at First; Continue Forming your Own Letters.

Instructor's Criticisms:

Letter "H": Apply Same Principle, as in Lesson 5: H

In Drawing First and Second Strokes of "A" and other Inclined Strokes of Letters on this Sheet, your Eye must Sense and Determine the Points Aimed at, until you will form the Habit of Approximating Fairly Correct, thus:





General Directions as in Lessons 1 and 9.

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Name: _____

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LESSON 13.

Trace at First; Continue Forming your Own Letters.

Instructor's Criticisms:

Faulty:

Make Sure about Vertical Axis of these four Letters:

O Q C G

In Order to get Clean, Sharp Corners, Turn First Stroke of Letters "D" and "B" outward, as Shown here Exaggerated:

D B

Note Shape of Main Stems of Letters "P," "R" and "J"

P R J

(Exaggerated)

Slightly Turn two Main Strokes of "U" outward,: U so as to Prevent this Shape:

U

O O O O O O

Q Q Q Q Q Q

C C C C C C

G G G G G G

D D D D D D

P P P P P P

B B B B B B

R R R R R R

J J J J J J

U U U U U U

S S S S S S

PRODUCTS

COURIER

SUPERIOR

General Directions as in Lesson 1 and 9.

Date: _____

Name: _____

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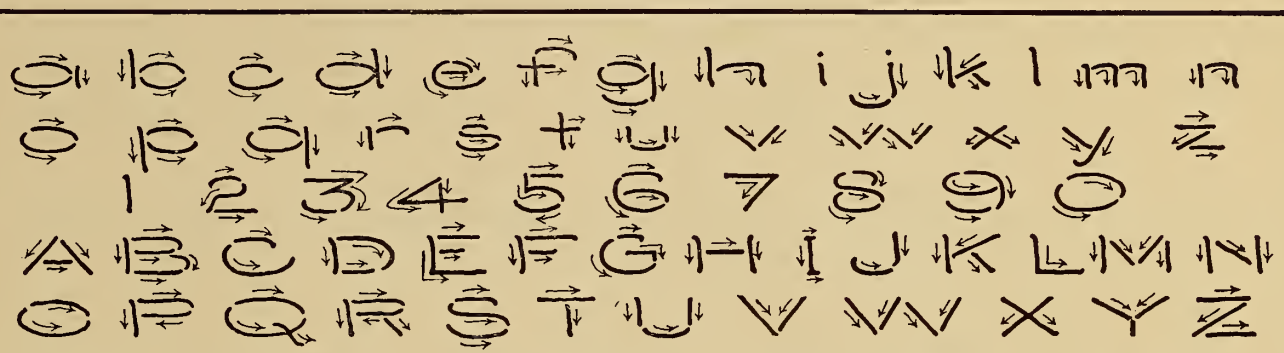
LESSON 14.

Instructor's Criticisms:

Note the greater Number of Strokes required at times to Form these Letters.
Axis of Ovals lays here in a Horizontal Direction.
Joints have been here purposely left open, so as to Enable the Student to Recognize the Method of Formation.



Extended Lettering

Letters and Spaces are Drawn out Horizontally.

Fraction Numerals should be about two-thirds the Height of the Whole Numbers, thus: $1\frac{1}{2}''$, $3\frac{3}{4}''$, $7\frac{5}{16}''$.

IF YOU WANT THE FRACTION NUMERALS TO APPEAR LARGER THAN THEY ARE, USE THE EXPANDED STYLE, THUS: $12\frac{15}{16}''$; ORDINARY: $12\frac{15}{16}''$

A well broken-in "303 Gillott" will answer best for this Class of Work.

Carefully Trace this Exercise, Closing up Joints and Omitting Arrows.
Plot and Re-arrange a Second Sheet in Accordance with the Above.

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LESSON 15.

Trace the Entire Sheet, Supply Correctly Spaced Lettering on Lines below.

Instructor's Criticisms:

Incorrect. ---- The first Aim should be to Form the Individual Letters well and to

Correctly Spaced ---- The first Aim should be to Form the Individual Letters well and to

Incorrect. ---- Make their Size and Slope, as well as the Thickness of Lines, as

Supply Correction ---- _____

Incorrect. ---- nearly Uniform as possible without the Aid of any Mechanical

Supply Correction ---- _____

Incorrect. ---- Means whatever. Speed will follow in Due Course. Each Suc-

Correctly Spaced: ---- Means whatever. Speed will follow in Due Course. Each Suc-

Incorrect. ---- CEEDING EXERCISE SHOULD INDICATE A WELL DEFINED IMPROVEMENT

Supply Correction ---- _____

Incorrect. ---- ON THE PRECEEDING ONE. UNLESS THERE IS A PERCEPTIBLE

Supply Correction ---- _____

STUDIES IN SPACING.

Symbols (∧ ⌒) Indicate Closing up or Widening Spaces, as the Case may be.
To Apply Regular System of Spacing to Freehand Lettering Consumes too much Time. Practice Placing all Letters Composing a Word, as Close as possible, Leave a Uniformly Sufficient Space between Words and you will soon Form the Habit of Correct Spacing.

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Lesson 16.

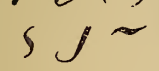
Use a "290 Gillott" Pen. Trace at First, then Form your Own Letters on Ruled Spaces below.

Instructor's Criticisms:

Use Same Degree of Slope, as Indicated in Lessons 1 to 7.

Remember that this Style of Lettering is Done in Practically the Same Way as Ordinary Writing. The Up-Strokes naturally are Hair-lines, the Down-strokes will Develop Heavy.

Pay Especial Attention to Gradual Increase as well as Release of Pressure upon Pen, Shown by Specimens below:



a b c d e f g h i j k l m n o p q

r s t u v w x y z . 1 2 3 4 5 6 7 8 9 0

Italics

It might be Advisable to Undertake a Second Sheet from this Lesson, until Principles are Mastered.

Date: _____

Name: _____

P.O. Address: _____

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LESSON 17.

Trace at First, afterwards Form your Own Letters.

Instructor's Criticisms:

Remember that the Heavy Stems of Letters should be Formed in One Stroke each. This requires Considerable Practice and Patience.

A B C D E F G H I J K L M N O P Q

R S T U V W X Y Z

ITALIC STYLE.

Italic Lettering

Suitable for Maps.

Small Sized Figures.

Similar Instructions as Given for Lesson 16.

Date: .....

Name: .....

P.O. Address: .....

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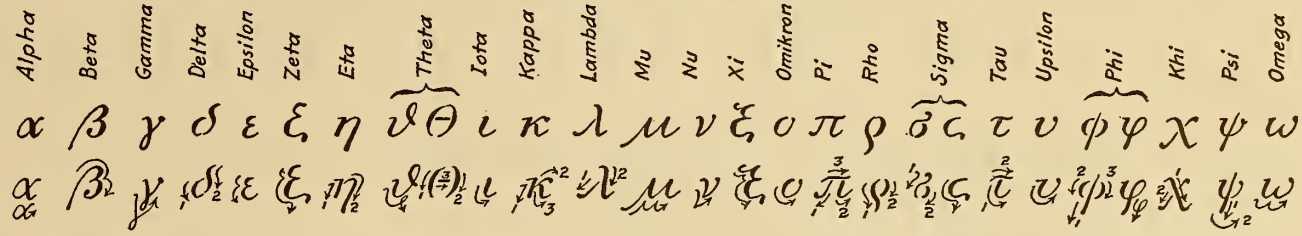
LESSON 18.

Trace, Closing up Joints; afterward Construct your Own Letters on Lines below left blank.

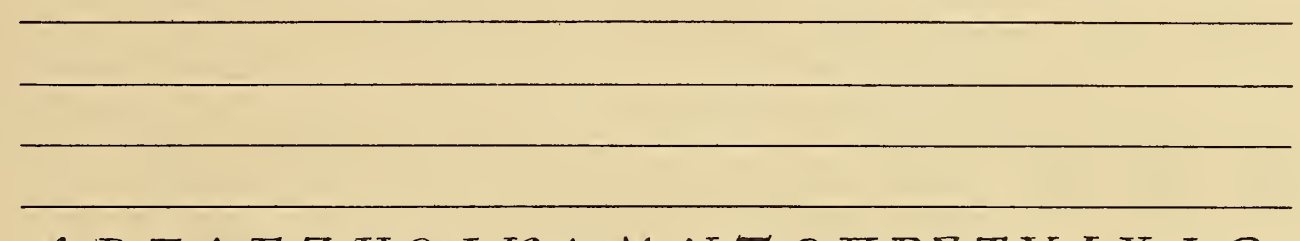
Instructor's Criticisms:

Alpha Beta Gamma Delta Epsilon Zeta Eta Theta Iota Kappa Lambda Mu Nu Xi Omikron Pi Rho Sigma Tau Upsilon Phi Khi Psi Omega

Lower Case.



Capitals.



GREEK ALPHABET.

So Many Draftsmen Experience some Difficulty about Constructing Greek Letters for Curve Sheets, etc., that this Alphabet is Added and Analyzed in a Practical Way. Draw as Shaded Lettering, Analogous to Italian Script (See Lessons 16 and 17.)

Date: _____

Name: _____

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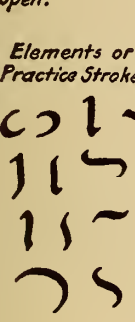
LESSON 19.

This Original was Executed with a "Round Writing Pen", Feeder Attached.

Instructor's Criticisms:

Penholder must be held nearly Vertical, although Leaning Sufficiently to have Nibs of Pen in Contact with Paper or Vellum.
Short Upstrokes are Produced with Sidewise Movement, Heavy Strokes with Downward Movement (Broad Side of Nibs)
Joints may be left Open.

Elements or Practice Strokes:



a b c d e f g h i j k l m n o p q
r s t u v w x y z 1 2 3 4 5 6 7 8 9

A B C D E F G H I J K L M N O
P Q R S T U V W X Y Z

Simplified Round Writing
(Gothic)

You will be surprised, how after Practicing the Elements or Practice Strokes of these Letters a certain "Swing" of Forming this Script correctly, has been acquired.

Date: _____

Name: _____

P.O. Address: _____

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LESSON 20.

Trace or Try to Construct Entire Lesson on Separate Sheet.

Instructor's Criticisms:

Width or Thickness of "I" forms Unit.

Thickness of Lower Case Letters about 2/3 that of Capitals.

GOTHIC.

This is not a Freehand Alphabet, strictly Speaking.
The Straight Lines are Ruled in, so as to Save Time.

Date: _____

Name: _____

P.O. Address: _____

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Lesson 21.

Trace or Construct Entire Lesson on Separate Sheet.

Instructor's Criticisms:

Draw Curved Portions Freehand. After Ruling in Short Dashes at Top and Bottom of Letters, put in Fillets Freehand

Similar Proportioning for Width of Stems, as in Lesson 20.

Roman.

Similar Directions, as for Lesson 20

Date: _____ _____

Name: _____

P.O. Address: _____

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LESSON 22.

Trace Letters at first; afterwards Form your Own Letters.

Instructor's Criticisms:

Use Medium-Wide Nibbed Pen. Thin Strokes and Short Horizontal Strokes Produced by Sidewise Movement of Pen.

A B C D E F G H I J K L M N
O P Q R S T U V W X Y Z

a b c d e f g h i j k l m n o p q
r s t u v w x y z

· FREEHAND Single-Stroke ROMAN ·

Similar Directions as given for Lessons 16, 17 and 19.

Date: _____

Name: _____

P.O. Address: _____

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LESSON 23.

Trace Letters given here; afterwards Form your Own Lettering on Lines below.

Instructor's Criticisms:

This is purely a Modification of the Ordinary Free-hand Vertical Lettering Shown in Lessons 9 to 14, with the Addition of Top and Bottom Horizontal Strokes.

Use a well-worn "303 Gillott" Pen for Capitals, and a somewhat Harder Pen for the Smaller Lettering.

A B C D E F G H I J K L M N
O P Q R S T U V W X Y Z

a b c d e f g h i j k l m n o p
q r s t u v w x y z

·ARCHITECTURAL·LETTERING·
·SUITABLE·FOR·TITLES·OF·PERSPECTIVES·ETC·

(Similar Directions as Given heretofore.)

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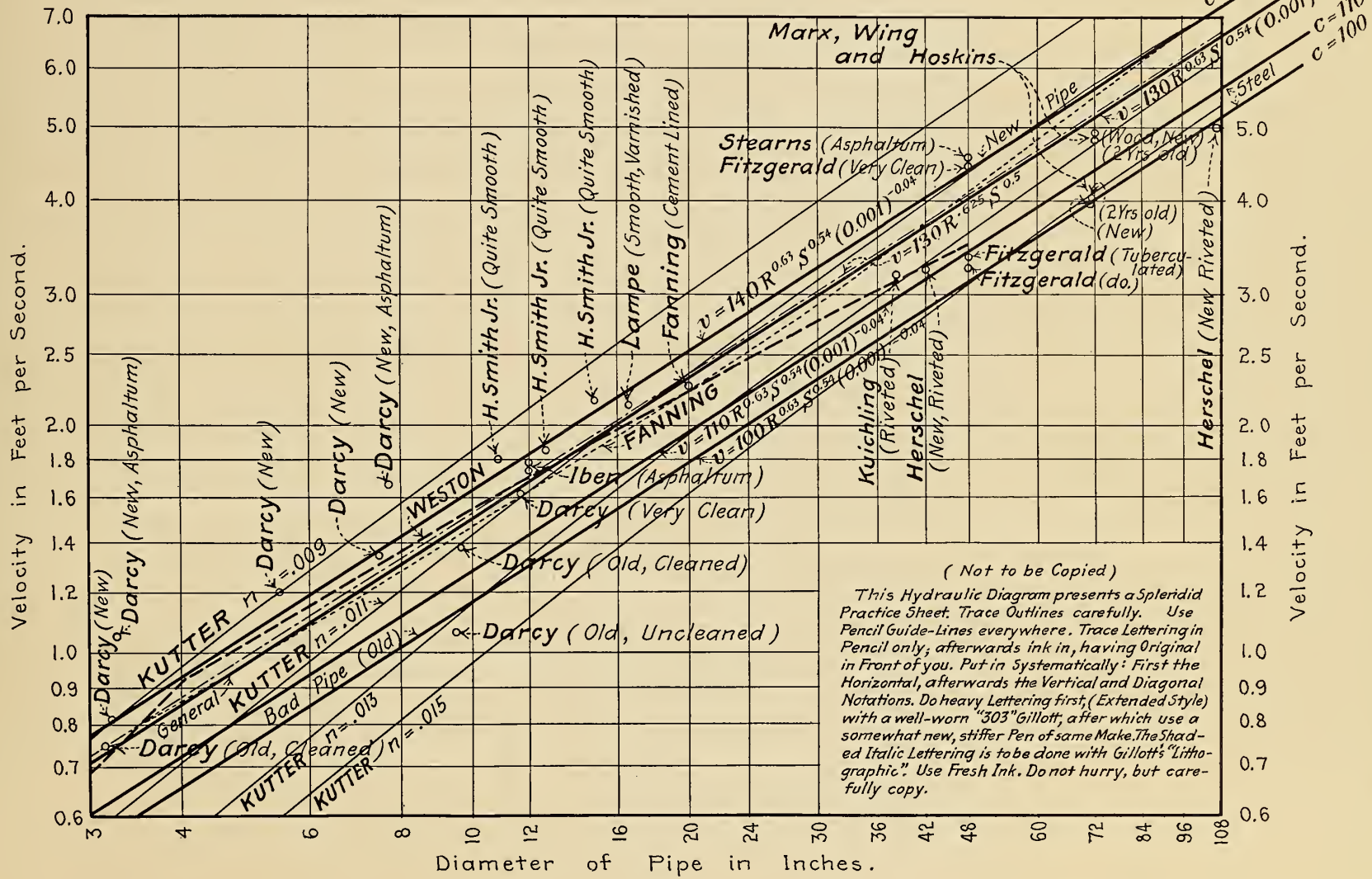
LESSON 24.



(Not to be Copied)

This Hydraulic Diagram presents a Spleridid Practice Sheet. Trace Outlines carefully. Use Pencil Guide-Lines everywhere. Trace Lettering in Pencil only; afterwards ink in, having Original in Front of you. Put in Systematically: First the Horizontal, afterwards the Vertical and Diagonal Notations. Do heavy Lettering first, (Extended Style) with a well-worn "303" Gillott; after which use a somewhat new, stiffer Pen of same Make. The Shaded Italic Lettering is to be done with Gillott's "Lithographic". Use Fresh Ink. Do not hurry, but carefully copy.

Date: _____

Name: _____

P.O. Address: _____

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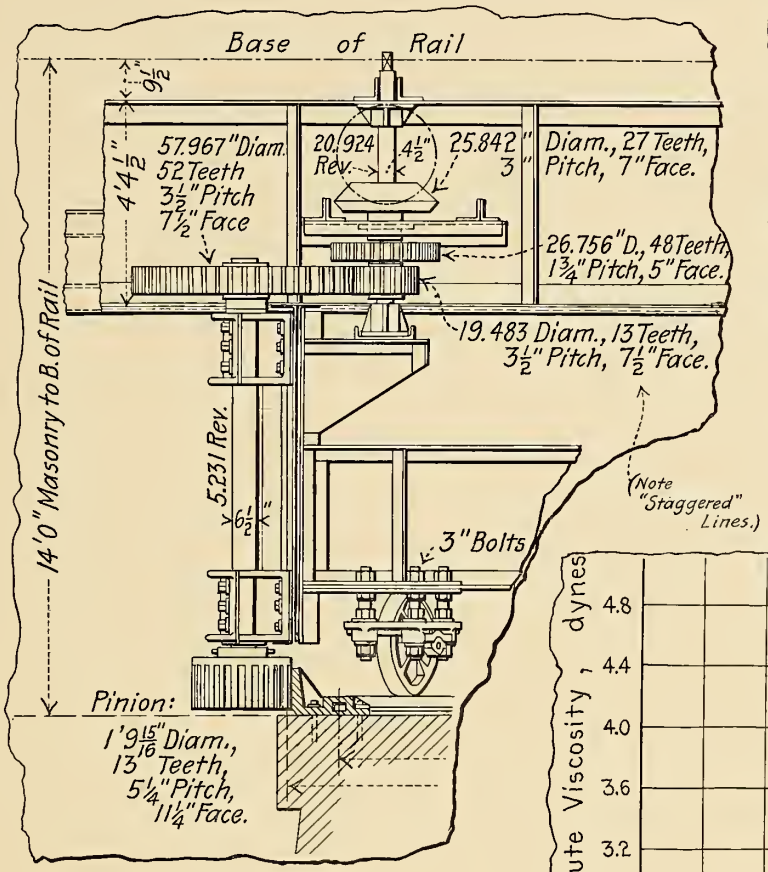
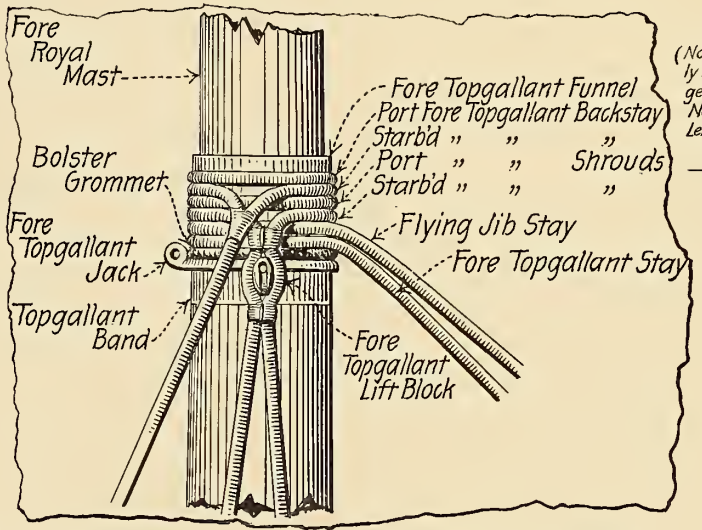
— LESSON 25. —

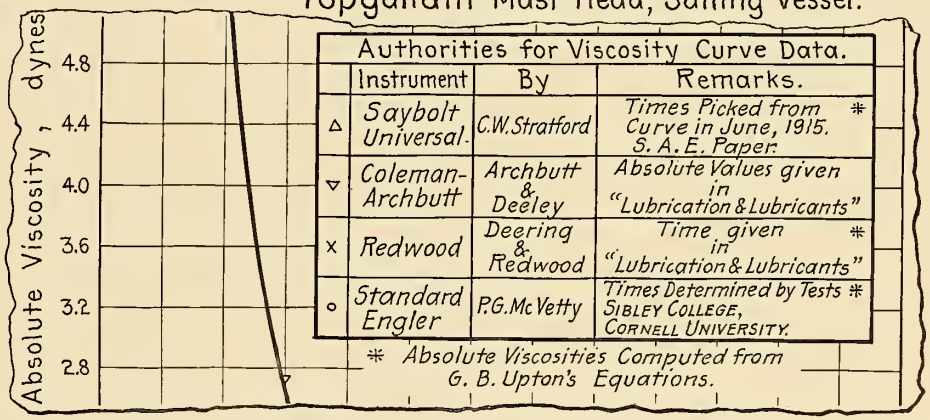
Instructor's Criticisms:



Machinery Detail of Swing Span.



Topgallant Mast Head, Sailing Vessel.



Authorities for Viscosity Curve Data.

	Instrument	By	Remarks.
△	Saybolt Universal	C.W. Stratford	Times Picked from Curve in June, 1915. S.A.E. Paper. *
▽	Coleman-Archbutt	Archbutt & Deeley	Absolute Values given in "Lubrication & Lubricants"
×	Redwood	Deering & Redwood	Time given in "Lubrication & Lubricants" *
○	Standard Engler	P.G. Mc Vetty	Times Determined by Tests * Sibley College, Cornell University.

* Absolute Viscosities Computed from G. B. Upton's Equations.

Table Inserted in Curve Sheet.

(Trace Carefully and Letter up, as Shown. If however, your Time is Limited, Trace only merest Outlines and Proceed with Lettering. Figures are Necessary to Show Proper Application of Descriptive Matter to them.)

Date: _____

Name: _____

P.O. Address: _____

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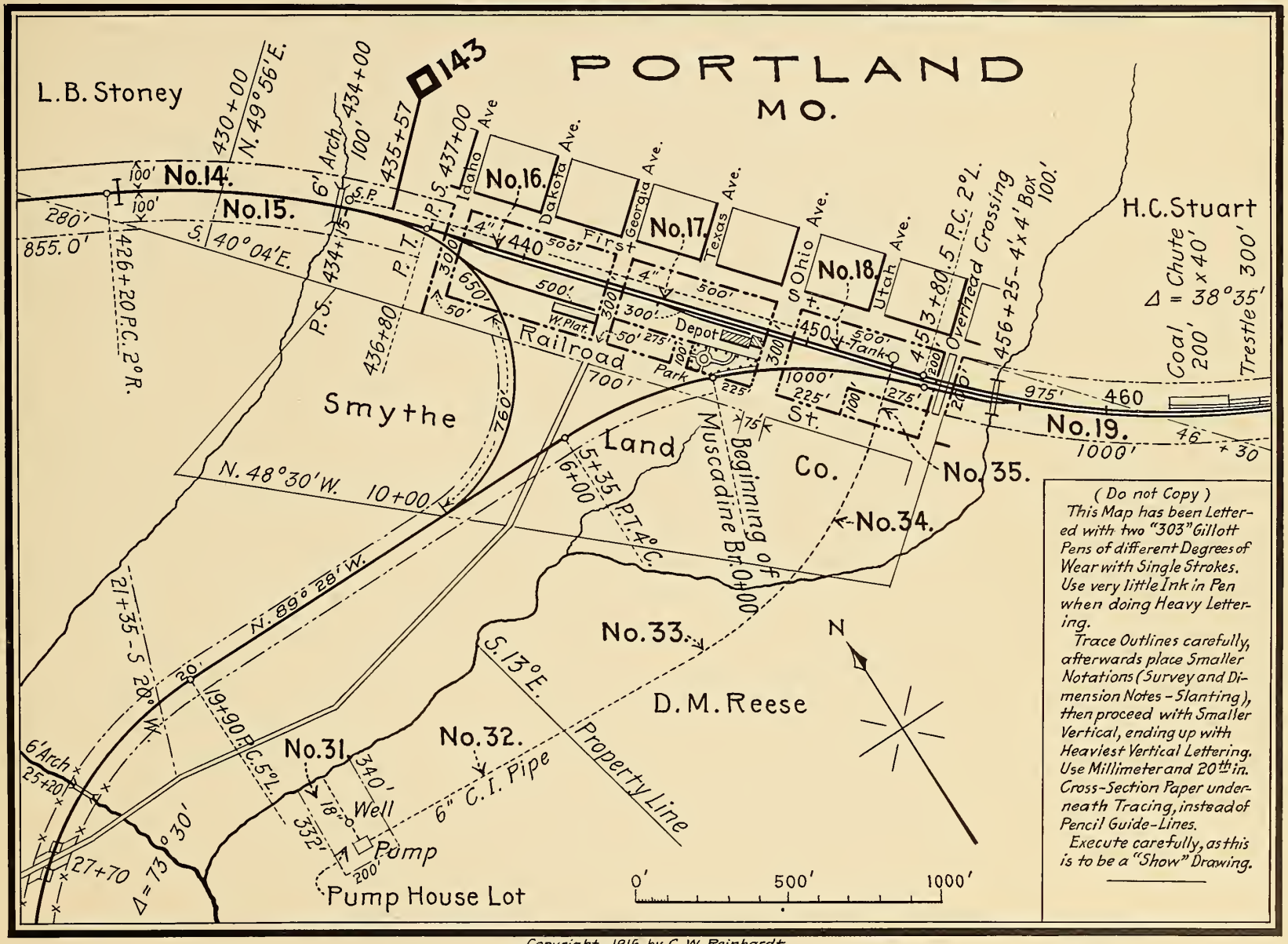
LESSON 26.



(Do not Copy)
This Map has been Lettered with two "303" Gillott Pens of different Degrees of Wear with Single Strokes. Use very little Ink in Pen when doing Heavy Lettering.

Trace Outlines carefully, afterwards place Smaller Notations (Survey and Dimension Notes - Slanting), then proceed with Smaller Vertical, ending up with Heaviest Vertical Lettering. Use Millimeter and 20th in. Cross-Section Paper underneath Tracing, instead of Pencil Guide-Lines.

Execute carefully, as this is to be a "Show" Drawing.

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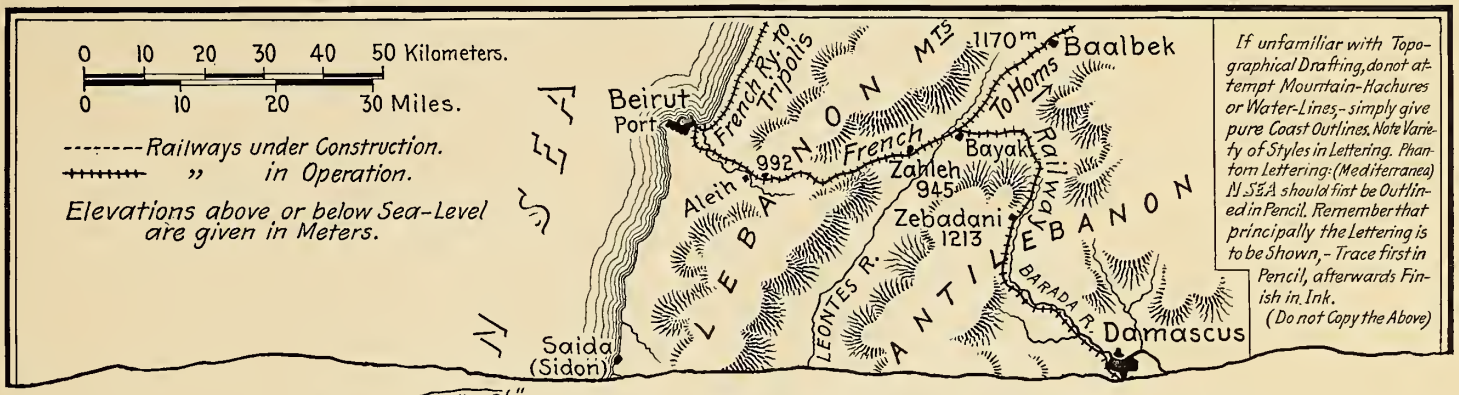
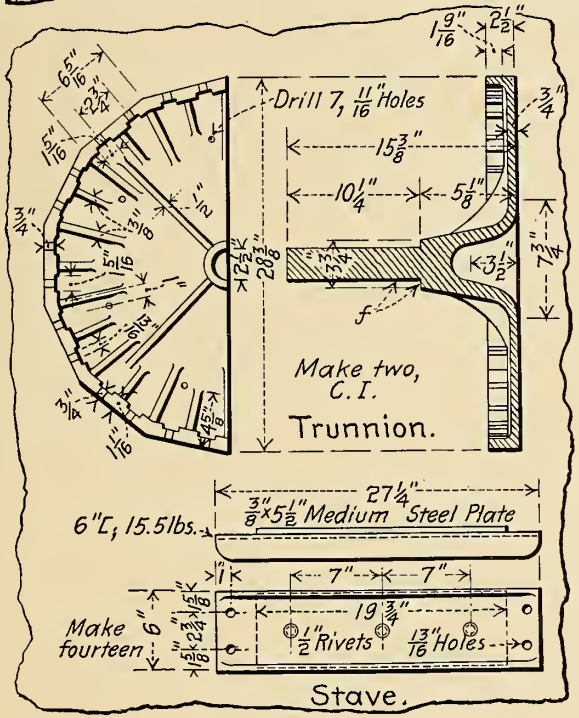
Date:

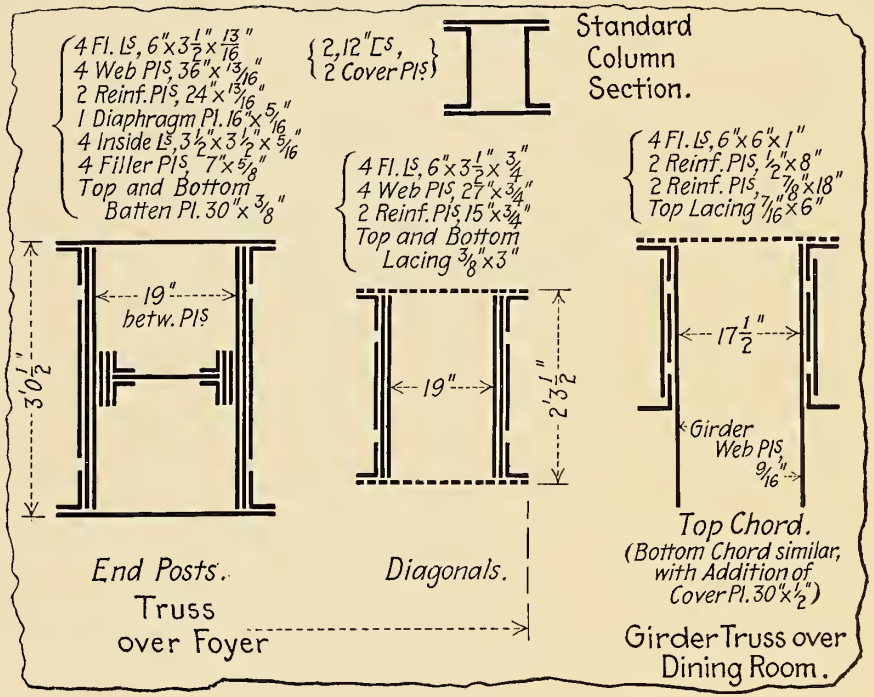
Name:
P.O. Address:

LESSON 27.



If unfamiliar with Topographical Drafting, do not attempt Mountain-Hachures or Water-Lines - simply give pure Coast Outlines. Note Variety of Styles in Lettering. Phantom Lettering: (Mediterranea) N S E A should first be Outlined in Pencil. Remember that principally the Lettering is to be Shown, - Trace first in Pencil, afterwards Finish in Ink.
(Do not Copy the Above)





Date: _____

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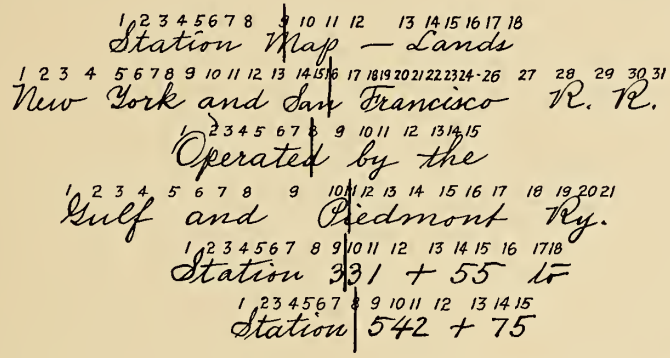
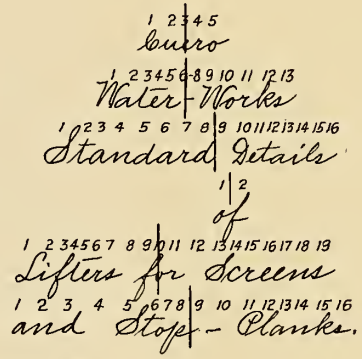
LESSON 28.





Counting Letters and Determining Centers for each Line.
(Not to be Copied.)

STATION MAP-LANDS

NEW YORK AND SAN FRANCISCO R. R.

Operated by the

GULF AND PIEDMONT RY.

STATION 331 + 55 TO

STATION 542 + 75

This Title was first Penciled in on Cross-Section Paper; in Tracing on Original Map this Paper was Shifted Sideways for each Line, so as to get Centers Lined up with General Center-Line of Title here. Finish each Line just as Indicated. In Lines 1, 2 and 4 the Tops and Bottoms of Letters are Finished off by Free-hand Touches. The fine Outlining for Shade-Line Strokes in Line 4 will wonderfully help Appearances.

Cuero

Water-Works

STANDARD DETAILS

OF

LIFTERS FOR SCREENS

AND STOP-PLANKS

Purely Single-Stroke Lettering Used here without any Fixing up. Here a Simple System of Counting a Space for a Letter, etc., was followed in the Laying out. Finish up Title carefully on your Tracing, according to faintly outlined Suggestions given. The Prominence or Height of Portions of Title depends upon their relative Importance and perhaps the Taste of the Draftsman.

(Construct a Title of your own in Space above left blank.)

Name: _____

Date: _____

P.O. Address: _____

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LESSON 29.

Map
of the
State of New York
Showing the Confined Location of
Westchester County

MAP
OF THE
STATE OF NEW YORK
SHOWING THE CONFINED LOCATION OF
WESTCHESTER COUNTY

0 10 20 30 40 50
Miles

STEEL
ARCH BRIDGE
ON LINE OF
FORTY-SECOND STREET
OVER THE
PENNSYLVANIA RAILROAD
24 th WARD

MASONRY
AND
END DETAILS

Scale : $\frac{1}{8}'' = 1'$

*After Center of Lines was Determined, each Line was Penciled in from **Center** to **Right**; afterwards the Part at Left of Center Line from **Right** to **Left.***

Above Title Shows how Fullness or Rounding off is Attained by Adding Scale, instead of Dashes, as in Lesson 28.

Trace Full Title above.

Letters at Right Left purposely Unfinished. Draw all Letters Freehand, Rule in Tops and Bottoms. Fill in as Indicated, Tracing Entire Title in Finished Shape.

(Two Unusual Shapes of Titles Presented here; Elliptical or Pyramidal Shape however, should be the Rule)

Date: _____

Name: _____

P.O. Address: _____

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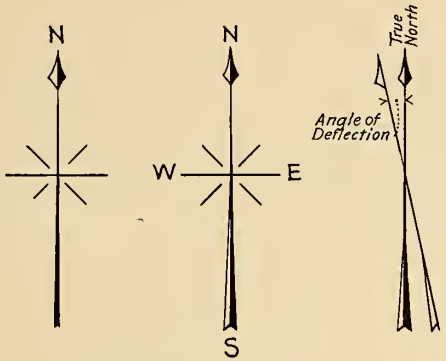
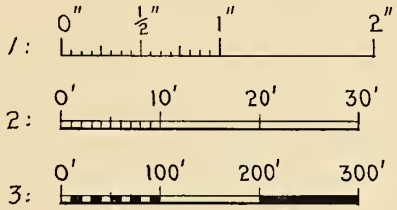
LESSON 30.

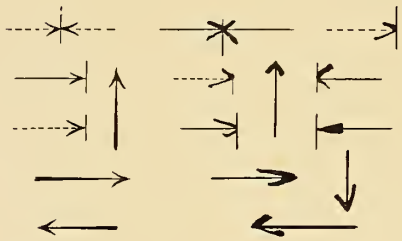


Simple Meridians.



4: *See Double Scale on Lesson 27.*

Scales.



Correct. *Incorrect.*

Arrowheads.

Phantom or Shadow Letters, like those below, are especially useful in Map Work to Designate Water Surfaces. (See also Lesson 27.)

LONG ISLAND SOUND

Outline first in Pencil; afterwards place Shade-Lines, Producing Letters as below:

LONG ISLAND SOUND

Phantom Lettering.

There are Several Ways of Giving to Freehand Lettering a more Finished Appearance, where Used for Titles.

1.) By Ruling in TOPS AND BOTTOMS *Putting in* FILLETS *Freehand.*

2.) By Finishing up TOPS AND BOTTOMS *Freehand.*

3.) By Adding Shade Strokes SHADE STROKES *in Light Outlines.*

4.) By Adding Thin Outlines THIN OUTLINES

Under 1.) and 2.) some Letters are Shown in Outline, so as to Illustrate Principle. Methods 3.) and 4.) are Employed Mainly for Portions to be Emphasized and will make Imperfections in Formation and Finish of Letters Disappear, giving an Effect of Fullness and Perfection, which of Course the Lettering does not otherwise possess.

(Trace completely. Give Additional Specimens, if possible.)

Date: _____

Name: _____

P.O. Address: _____

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